

## แบบฝึกหัด Association Rule

จาก transaction ที่กำหนด ให้นักศึกษา หา frequent itemsets โดยใช้

1. Apriori
2. FP-Growth

กำหนด support thresholds=33.34% และ confidence threshold c=60%

Transaction ID	Items
T1	HotDogs, Buns, Ketchup
T2	HotDogs, Buns
T3	HotDogs, Coke, Chips
T4	Chips, Coke
T5	Chips, Ketchup
T6	HotDogs, Coke, Chips

Transaction ID	Items
T1	Hotdogs, Buns, Ketchup
T2	Hotdogs, Buns
T3	Hotdogs, Coke, Chips
T4	Chips, Coke
T5	Chips, Ketchup
T6	Hotdogs, Coke, Chips

## 1. Apriori Algorihm

### 1.1. .

Items	Support Count	Support
Hotdogs	4	66.67%
Buns	2	33.34%
Ketchup	2	33.34%
Coke	3	50.00%
Chips	4	66.67%

### 1.2. Support $\geq$ 33.34%

Itemset	Support Count	Support
{Hotdogs, Buns}	2	33.34%
{Hotdogs, Ketchup}	1	16.67%
{Hotdogs, Coke}	2	33.34%
{Hotdogs, Chips}	2	33.34%
{Buns, Ketchup}	1	16.67%
{Buns, Coke}	0	0%
{Buns, Chips}	0	0%
{Ketchup, Coke}	0	0%
{Ketchup, Chips}	1	16.67%
{Coke, Chips}	2	33.34%

- {Hotdogs, Buns}
- {Hotdogs, Coke}
- {Hotdogs, Chips}
- {Coke, Chips}

1.1. Support  $\geq 33.34\%$

Itemset	Support Count	Support
{Hotdogs, Coke, Chips}	2	33.34%
{Hotdogs, Buns, Chips}	0	0%

- {Hotdogs, Coke, Chips}

1.2. Confidence  $\geq 60\%$

Rule	Confidence	Result
{Hotdogs} $\rightarrow$ {Chips}	50%	0
{Hotdogs} $\rightarrow$ {Coke}	50%	0
{Coke} $\rightarrow$ {Chips}	66.67%	1
{Chips, Coke} $\rightarrow$ {Hotdogs}	100%	1

- {Coke}  $\rightarrow$  {Chips}
- {Chips, Coke}  $\rightarrow$  {Hotdogs}

## 2. FP-Growth Algorithm

### 2.1. .

T1: Hotdogs, Buns, Ketchup

T2: Hotdogs, Buns

T3: Hotdogs, Chips, Coke

T4: Chips, Coke

T5: Chips, Ketchup

T6: Hotdogs, Chips, Coke

### 2.2. Support $\geq$ 33.34%

- {Hotdogs} (66.67%)
- {Chips} (66.67%)
- {Coke} (50.00%)
- {Hotdogs, Chips} (33.34%)
- {Hotdogs, Coke} (33.34%)
- {Coke, Chips} (33.34%)
- {Hotdogs, Coke, Chips} (33.34%)

### 2.3. Confidence $\geq 60\%$

Rule	Confidence	Result
{Hotdogs} $\rightarrow$ {Chips}	50%	0
{Hotdogs} $\rightarrow$ {Coke}	50%	0
{Coke} $\rightarrow$ {Chips}	66.67%	1
{Chips, Coke} $\rightarrow$ {Hotdogs}	100%	1

- {Coke}  $\rightarrow$  {Chips}
- {Chips, Coke}  $\rightarrow$  {Hotdogs}

## Frequent Itemsets

- {Hotdogs}
- {Chips}
- {Coke}
- {Hotdogs, Chips}
- {Hotdogs, Coke}
- {Coke, Chips}
- {Hotdogs, Coke, Chips}